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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,895	03/28/2001	Minako Kitahara	2001_0364A	2391

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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER	
VO, NGUYEN THANH	

ART UNIT	PAPER NUMBER
2685	

DATE MAILED: 01/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/818,895	KITAHARA, MINAKO	
	Examiner	Art Unit	
	Nguyen T Vo	2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) *2-5,9-11,13,14,16 and 17* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-8,12 and 15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/08/2002*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 1, 6-8, 12 and 15 in the reply filed on 10/20/2004 is acknowledged.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 6-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 6, the recitation "a co-phase equal amplitude excitation method" renders the claim indefinite because it is not clear as to what are being claimed (although the term "co-phase equal amplitude excitation method" is disclosed at various portions of the present specification (for example, pages 41, 44), it is not clear as to exactly how much of the above portions of the present specification is to be included in

the claim). For the purpose of examination, the above recitation is interpreted with the broadest reasonable interpretation.

As to claim 7, the recitation "a solution of an SINR reference method" renders the claim indefinite because it is not clear as to what are being claimed (although the term "a solution of an SINR reference method" is disclosed at various portions of the present specification (for example, pages 41, 44), it is not clear as to exactly how much of the above portions of the present specification is to be included in the claim). For the purpose of examination, the above recitation is interpreted with the broadest reasonable interpretation.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 6, 8, 12, 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Kohno (6,763,062, provided by the examiner).

As to claim 1, Kohno discloses in figure 2 a receiver for providing each of a plurality of antennas 41 with a receive weight (see blocks 40, 49), thereby controlling receive directivity of the antennas as a whole (see column 5 lines 40-44; column 6 lines 27-34), and receiving a signal transmitted from a mobile station device serving as an

opposite party of communication (see column 6 lines 4-11; column 8 lines 12-26), said receiver comprising means for detecting an arrival direction and/or power of a signal from a mobile station device (see column 6 lines 4-34; column 8 lines 12-26); and means for calculating a solution of a receive weight control method as receive weights of respective antennas, based on a result the detection, under such a condition that a received quality of a signal transmitted from a mobile station device serving as an opposite party of communication becomes favorable, and receiving the signal by using the calculated receive weights (see column 5 lines 35-44; column 6 lines 4-34; column 7 lines 25-34, lines 51-60; column 8 lines 12-26). Kohno thus discloses all the claimed limitations.

As to claim 6, Kohno discloses arrival detection means for detecting an arrival direction of a signal from a mobile station device serving as an opposite party of communication (see column 6 lines 4-13); and reception means for calculating a solution of a co-phase equal amplitude excitation method as receive weights of respective antennas, based on the detected arrival direction, under such a condition that a receive power level of a signal transmitted from a mobile station device serving as an opposite party of communication becomes large (column 6 lines 19-34; column 10 lines 21-33), and receiving the signal by using the calculated receive weights (column 6 lines 19-34).

As to claim 8, the rejection to claim 6 above is herein incorporated. In addition, the receive weight control method as disclosed see column 5 lines 35-44; column 6 lines 4-34; column 7 lines 25-34, lines 51-60; column 8 lines 12-26 reads on the claimed

limitation "selecting a receive weight control method" as claimed with a broadest reasonable interpretation.

As to claim 12, Kohno discloses that the receiver is disposed in a base station device of a mobile radio communication system (see column 5 lines 6-8), and wherein said receiver comprises plurality of antennas 41 for receiving a signal radio-transmitted from a mobile station device; as many RF receivers as the antennas (see numerals 43-47), each the RF receivers converting a frequency band of a signal received by each of antennas from a radio frequency band to a baseband (see the output of the receiver 47); an arrival direction estimation and power average measurement section for detecting an arrival direction of a signal arriving from each mobile station device by estimation and/or detecting an average power of a signal arriving from each mobile station device, based on a signal supplied from each of the RF receivers (see column 6 lines 4-18); a weight control section 40 for calculating a solution of a predetermined receive weight control method as receive weights of respective antennas, by using a result of detection conducted by the arrival direction estimation and power average measurement section, as a parameter (see column 5 lines 26-45; column 6 lines 4-34); as many multipliers 44 as antennas, each of the multipliers multiplying the signal from each of the RF receivers by a receive weight of each of the antennas supplied from the weight control section 40; and an adder 46 for summing results of multiplying conducted by the multipliers, and outputting a result of the summing as a result of reception of a signal from a mobile station device serving as an opposite party of communication.

As to claim 15, the rejection to claim 12 above is herein incorporated. In addition, the base station in figure 2 can also function as a repeater (relay amplifying device as claimed). Therefore, it reads on the claimed limitation "said receiver is disposed in a relay amplifying device of a mobile communication system".

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kohno in view of Hiramatsu (6,512,917, provided by the examiner).

As to claim 7, Kohno discloses arrival detection means for detecting an arrival direction of a signal from a mobile station device serving as an opposite party of communication (see column 6 lines 4-13), and power detection means for detecting power of the signal from the mobile station device (see column 6 lines 4-13). Kohno fails to disclose reception means for calculating a solution of an SINR reference method as receive weights of respective antennas as claimed. Hiramatsu discloses reception means for calculating a solution of an SINR reference method as receive weights of respective antennas under such condition that an SINR of a signal transmitted from a mobile station device serving as an opposite party of communication becomes large (see column 6 lines 9-24). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the above teaching of Hiramatsu to

Kohno, in order to improve SINR of the received signals (as suggested by Hiramatsu, column 6 lines 9-24).

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kamiya (5,854,612), Hou (6,483,459), Yukitomo (EP 0924876), Miya (JP411289293), Fujimoto (JP407336130), Ylitalo (6,580,701), Sorelius (6,411,257), Miyoshi (US 2002/0123371), Tsujimoto (5,752,173) all disclose providing each of a plurality of antennas with a receive weight.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T Vo whose telephone number is (703) 308-6728. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (703)305-4385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nguyen Vo

Nguyen Vo
12-16-2004

NGUYEN T. VO
PRIMARY EXAMINER